

CLAIMS

1. A wireless apparatus capable of supporting two types of modulation methods having different multi-value numbers, comprising:

5 modulation method switching means (3) for switching, when another wireless apparatus to be in wireless connection with the wireless apparatus is capable of supporting said two types of modulation methods, the modulation method between a first modulation method having a smaller multi-value number and a second modulation method having a larger multi-value number, while the wireless apparatus is
10 communicating with said another wireless apparatus;

storing means for storing a first threshold value of a parameter indicative of communication environment of transmission path, at which the wireless apparatus can communicate with said another wireless apparatus at least by said second modulation method of said two types of modulation methods;

15 parameter measuring means (2) for measuring said parameter based on a signal received from said another wireless apparatus;

parameter comparing means (4) for comparing, when there is a connection request from said another wireless apparatus to the wireless apparatus, said stored first threshold value of the parameter corresponding to said second modulation method with
20 said measured parameter; and

channel allocation determining means (4) for permitting, when it is determined by said parameter comparing means that said measured parameter is not lower than said stored first threshold value of the parameter, allocation of a wireless channel to said
25 another wireless apparatus.

2. The wireless apparatus according to claim 1, wherein

said storing means stores in advance a second threshold value of a parameter indicative of communication environment of transmission path, at which the wireless

apparatus can communicate with another wireless apparatus by said first modulation method; and

when there is a connection request from another wireless apparatus that supports said first modulation method but not said second modulation method to the wireless apparatus, said parameter comparing means compares said stored second threshold value of the parameter corresponding to said first modulation method with the parameter measured by said parameter measuring means, and when it is determined by said parameter comparing means that said measured parameter is not lower than said stored second threshold value of the parameter, said channel allocation determining means permits allocation of a wireless channel to said another wireless apparatus that supports said first modulation method but not said second modulation method.

3. The wireless apparatus according to claim 1, wherein said channel allocation determining means determines presence/absence of any empty slot and empty channel in the wireless apparatus, and when there is no empty slot or empty channel, rejects allocation of a wireless channel regardless of the result of comparison by said parameter comparing means.

4. The wireless apparatus according to claim 1, further comprising means for notifying another wireless apparatus requesting connection to the wireless apparatus about rejection of channel allocation, when said channel allocation determining means rejects allocation of the wireless channel.

5. The wireless apparatus according to claim 1, wherein the parameter is based on a reception signal level from another wireless apparatus requesting connection to the wireless apparatus.

6. A channel allocation method in a wireless apparatus capable of supporting

two types of modulation methods of different multi-value numbers, said wireless apparatus including: modulation method switching means (3) for switching, when another wireless apparatus to be in wireless connection with the wireless apparatus is capable of supporting said two types of modulation methods, the modulation method between a first modulation method having a smaller multi-value number and a second modulation method having a larger multi-value number, while the wireless apparatus is communicating with said another wireless apparatus; storing means for storing a first threshold value of a parameter indicative of communication environment of transmission path, at which the wireless apparatus can communicate with said another wireless apparatus at least by the second modulation method of said two types of modulation methods; and parameter measuring means (2) for measuring said parameter based on a signal received from said another wireless apparatus;

said channel allocation method comprising the steps of:

comparing, when there is a connection request from said another wireless apparatus to the wireless apparatus, said stored first threshold value of the parameter corresponding to said second modulation method with the measured parameter; and

permitting, when it is determined that said measured parameter is not lower than said stored first threshold of the parameter, allocation of a wireless channel to said another wireless apparatus.

7. The channel allocation method according to claim 6, wherein

said storing means stores in advance a second threshold value of a parameter indicative of communication environment of transmission path, at which the wireless apparatus can communicate with another wireless apparatus by the first modulation method; said method further comprising the steps of:

comparing, when there is a connection request from another wireless apparatus that supports said first modulation method but not said second modulation method to the wireless apparatus, said stored second threshold value of the parameter

corresponding to said first modulation method with said parameter measured by the parameter measuring means; and

5 permitting, when it is determined that said measured parameter is not lower than said stored second threshold value of the parameter, allocation of a wireless channel to said another wireless apparatus that supports said first modulation method but not said second modulation method.

8. The channel allocation method according to claim 6, further comprising the step of

10 determining presence/absence of any empty slot and empty channel in the wireless apparatus, and when there is no empty slot or empty channel, rejecting allocation of a wireless channel regardless of the result of comparison in said parameter comparing step.

15 9. The channel allocation method according to claim 6, further comprising the step of

notifying another wireless apparatus requesting connection to the wireless apparatus about rejection of channel allocation, when allocation of a wireless channel is rejected.

20 10. The channel allocation method according to claim 6, wherein said parameter is based on a reception signal level from another wireless apparatus requesting connection to the wireless apparatus.

25 11. A channel allocation program in a wireless apparatus capable of supporting two types of modulation methods of different multi-value numbers, said wireless apparatus including: modulation method switching means (3) for switching, when another wireless apparatus to be in wireless connection with the wireless apparatus is

capable of supporting said two types of modulation methods, the modulation method between a first modulation method having a smaller multi-value number and a second modulation method having a larger multi-value number, while the wireless apparatus is communicating with said another wireless apparatus; storing means for storing a first
5 threshold value of a parameter indicative of communication environment of transmission path, at which the wireless apparatus can communicate with said another wireless apparatus at least by the second modulation method of said two types of modulation methods; and parameter measuring means (2) for measuring said parameter based on a signal received from said another wireless apparatus;

10 said channel allocation program causing a computer to execute the steps of:
 comparing, when there is a connection request from said another wireless apparatus to the wireless apparatus, said stored first threshold value of the parameter corresponding to said second modulation method with the measured parameter; and
 permitting, when it is determined that said measured parameter is not lower than
15 said stored first threshold of the parameter, allocation of a wireless channel to said another wireless apparatus.

12. The channel allocation program according to claim 11, wherein
 said storing means stores in advance a second threshold value of a parameter
20 indicative of communication environment of transmission path, at which the wireless apparatus can communicate with another wireless apparatus by the first modulation method;

 said channel allocation program causes the computer to further execute the steps of:
25 comparing, when there is a connection request from another wireless apparatus that supports said first modulation method but not said second modulation method to the wireless apparatus, said stored second threshold value of the parameter corresponding to said first modulation method with said parameter measured by the

parameter measuring means; and

5 permitting, when it is determined that said measured parameter is not lower than said stored second threshold value of the parameter, allocation of a wireless channel to said another wireless apparatus that supports said first modulation method but not said second modulation method.

13. The channel allocation program according to claim 11, causing the computer to further execute the step of

10 determining presence/absence of any empty slot and empty channel in the wireless apparatus, and when there is no empty slot or empty channel, rejecting allocation of a wireless channel regardless of the result of comparison in said parameter comparing step.

14. The channel allocation program according to claim 11, causing the computer to further execute the step of

15 notifying another wireless apparatus requesting connection to the wireless apparatus about rejection of channel allocation, when allocation of a wireless channel is rejected.

20 15. The channel allocation program according to claim 11, wherein

 said parameter is based on a reception signal level from another wireless apparatus requesting connection to the wireless apparatus.